

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

### AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1. (Currently Amended) In a computing system that has access to one or more fonts, each font including glyphs representing the corresponding characters of the font, a method for using externally parameterizeable constraints to synthesize a font variant, the method comprising:

accessing a font file comprising a plurality of glyphs and standard instructions for constraining each of the plurality of glyphs, each of the plurality of glyphs storing glyph features;

utilizing the font file in accessing a scaled font that has been scaled for rendering at a target size and a target resolution, the scaled font referencing hints that constrain how glyphs of the scaled font are to be rendered at the target size and target resolution, wherein the font file is fully internally constrained and includes hints sufficient to synthesize and render the scaled font;

receiving a request for a font variant of the scaled font which corresponds to the accessed font file;

determining by the computing system that a font file for the requested font variant is inaccessible;

accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered; and

applying the one or more external font parameters to the scaled font to synthesize a the font variant such that the hints from the scaled font are preserved in the font variant;

render glyphs of the font variant that comply with the one or more external font parameters and the preserved hints.

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

2. (Original) The method as recited in claim 1, wherein accessing a scaled font that has been scaled for rendering at a target size and a target resolution comprises accessing a scaled font that includes font-hinting language instructions.

3. (Original) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing a parameter that represents the glyphs of the scaled font are to be positionally compressed wherein the positional compression is in at least one of a vertical and horizontal direction.

4. (Original) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing a parameter that represents the glyphs of the scaled font are to be positionally expanded wherein the positional expansion is in at least one of a vertical and horizontal direction.

5. (Original) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing a parameter that represents the glyphs of the scaled font are to be weight compressed wherein the weight compression is in at least one of a vertical and horizontal direction.

6. (Original) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing a parameter that represents the glyphs of the scaled font are to be weight expanded wherein the weight expansion is in at least one of a vertical and horizontal direction.

7. (Previously Presented) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing a parameter that represents how the glyphs of the scaled font are to be offset wherein the offset is in at least one of a vertical or horizontal direction.

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

8. (Original) The method as recited in claim 1, wherein accessing one or more external font parameters that alter how the glyphs of the scaled font are to be rendered comprises accessing font-hinting language instructions.

9. (Original) The method as recited in claim 1, wherein applying the one or more external font parameters to the scaled font to synthesize a font variant such that the hints are preserved in the font variant comprises compressing the scaled font in at least one of a vertical and horizontal direction.

10. (Original) The method as recited in claim 1, wherein applying the one or more external font parameters to the scaled font to synthesize a font variant such that the hints are preserved in the font variant comprises expanding the scaled font in at least one of a vertical and horizontal direction.

11. (Original) The method as recited in claim 1, wherein applying the one or more external font parameters to the scaled font to synthesize a font variant such that the hints are preserved in the font variant comprises offsetting the scaled font in at least one of a vertical and horizontal direction.

12. (Original) The method as recited in claim 1, wherein applying the one or more external font parameters to the scaled font to synthesize a font variant such that the hints are preserved in the font variant comprises applying the one or more external font parameters to the scaled font to synthesize a font variant such that standardized distances and reference heights of the scaled font are preserved.

13. (Cancelled).

14. (Currently Amended) The method as recited in claim ~~13~~ 1, wherein rendering glyphs of the font variant that comply with both the one or more external font parameters and the

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

hints comprises rendering glyphs of the font variant that comply with the one or more external font parameters and standardized distances and reference heights.

15 (Currently Amended) The method as recited in claim ~~13~~ 1, wherein rendering glyphs of the font variant that comply with both the one or more external font parameters and the hints comprises performing scan conversion on font variant outlines that comply with the one or more external font parameters and the hints.

16. (Currently Amended) The method as recited in claim ~~13~~ 1, wherein rendering glyphs of the font variant that comply with both the one or more external font parameters and the hints comprises addressing and setting the intensity for individual sub-components of a display device so as to more accurately render the glyphs of the font variant.

17. (Previously Presented) The method as recited in claim 1, further comprising:  
scaling the glyphs of a font file for rendering at the target size and target resolution.

18. (Original) The method as recited in claim 1, further comprising:  
caching the font variant such that the font variant can be efficiently accessed in response to subsequent application program commands.

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

19. (Currently Amended) A computer program product for use in a computing system that has access to one or more fonts, each font including glyphs representing the corresponding characters of the font, the computer program product for implementing a method for using externally parameterizeable constraints to synthesize a font variant, the computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the computing system to perform the following:

access a font file comprising a plurality of glyphs and standard instructions for constraining each of the plurality of glyphs, each of the plurality of glyphs storing glyph features;

utilize the font file to access a scaled font that has been scaled for rendering at a target size and a target resolution, the scaled font referencing hints that constrain how glyphs of the scaled font are to be rendered at the target size and target resolution, wherein the font file is fully internally constrained and includes hints sufficient to synthesize and render the scaled font;

receive a request for a font variant of the scaled font corresponding to the accessed font file;

determine that a font file for the requested font variant is inaccessible;

access one or more external font parameters that alter how the glyphs of the scaled font are to be rendered; ~~and~~

apply the one or more external font parameters to the scaled font to synthesize a the font variant such that the hints are preserved in the font variant

render glyphs of the font variant that comply with the one or more external font parameters and the preserved hints.

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

20. (Currently Amended) A computing system, comprising:

one or more processors; and

one or more computer-readable media, having stored thereon one or more fonts, each font including glyphs representing the corresponding characters of the font and having stored thereon a hint processor that can be executed by the one or more processors, the hint processor being configured to:

access a font file comprising a plurality of glyphs and standard instructions for constraining each of the plurality of glyphs, each of the plurality of glyphs storing glyph features;

utilize the font file to access a scaled font that has been scaled for rendering at a target size and a target resolution, the scaled font referencing hints that constrain how glyphs of the scaled font are to be rendered at the target size and target resolution, wherein the font file is fully internally constrained and includes hints sufficient to synthesize and render the scaled font;

receive a request for a font variant of the scaled font corresponding to the accessed font file;

determine that a font file for the requested font variant is inaccessible;

access one or more external font parameters that alter how the glyphs of the scaled font are to be rendered; ~~and~~

apply the one or more external font parameters to the scaled font to synthesize ~~a the~~ font variant such that the hints are preserved in the font variant

render glyphs of the font variant that comply with the one or more external font parameters and the preserved hints.

21. (Previously Presented) The method as recited in claim 1, further comprising determining that one or more gaps between the glyphs of the scaled font should be modified, and wherein applying the one or more external font parameters to the scaled font modifies the one or more gaps between the glyphs.

Application No. 10/764,745  
Supplemental Amendment "C" dated April 12, 2006  
Supplemental Reply to Office Action mailed January 4, 2006

22. (Previously Presented) The method as recited in claim 21, wherein determining that one or more gaps between the glyphs should be modified is done in response to applying justification to the glyphs of the scaled font.

23. (Previously Presented) The method as recited in claim 1, wherein applying the one or more external font parameters uniformly alters how the glyphs of the scaled font are rendered.

24. (Currently Amended) The method as recited in claim 1, wherein accessing one or more external font parameters that alters how the glyphs of the scaled font are to be rendered comprises accessing at least one of a glyph expansion or compression percentage, and wherein applying the one or more external font parameters to the scaled font comprises applying the at least one glyph expansion or compression percentage to the scaled font to synthesize a font variant such that the hints are preserved in the font variant.

25. (New) A method as recited in claim 1, wherein said one or more external font parameters include font-hinting instructions in the same language as the hints of the scaled font.